

1 **What is claimed is:**

2 1. A method for manufacturing a stator with a radial winding, comprising the steps of:

3 providing a plurality of pole plates made of a magnetically conductive material, each
4 said pole plate comprising a hub and at least two poles extending radially outward from the
5 hub, said at least two poles being spaced by an identical angular interval, each of said at least
6 two poles having a distal end with a magnetic pole face;

7 winding a metal wire around the poles of the pole plates, thereby forming a pole plate
8 assembly; and

9 engaging at least two said pole plate assemblies together, the poles of said at least two
10 pole plate assemblies being disposed alternately.

11 2. The method as claimed in claim 1, wherein the pole plate assemblies of even number are
12 assembled together by aligning central holes of the pole plate assemblies and then inserting an
13 engaging member through the aligned central holes.

14 3. The method as claimed in claim 2, the even-numbered pole plate assemblies and the
15 engaging member are engaged together by fitting engagement.

16 4. The method as claimed in claim 2, wherein the engaging member includes a central hole for
17 rotatably receiving a rotor.

18 5. A stator with a radial winding, the stator comprising at least two pole plate assemblies, each
19 said pole plate assembly comprising a plurality of pole plates made of a magnetically
20 conductive material, each said pole plate assembly comprising a hub having a central hole and
21 at least two poles extending radially outward from the hub, the poles being spaced by an
22 identical angular interval, each said pole having a distal end with a magnetic pole face, each
23 said pole having a metal wire wound therearound.

24 6. The stator with a radial winding as claimed in claim 5, wherein-a number of said at least
25 two pole plate assemblies is even, further comprising an engaging member that extends
26 through the central holes of the even-numbered pole plate assemblies that are aligned with
27 each other, thereby engaging the even-numbered pole plate assemblies of even number

1 together with the poles of said at least two pole plate assemblies disposed alternately and
2 spaced by an identical angular interval, the engaging member having a central hole for
3 rotatably receiving a rotor.

4 7. The stator with a radial winding as claimed in claim 5, wherein each said pole plate
5 assembly comprises more than one silicon-steel plate that are stacked together.

6 8. The stator with a radial winding as claimed in claim 6, wherein the magnetic pole face on
7 the distal end of each said pole of each said pole plate assembly comprises a vertically
8 extending inductive face.

9 9. The stator with a radial winding as claimed in claim 8, wherein the inductive face of each
10 said pole plate assembly includes two ends, one of the ends of the inductive face of each said
11 pole plate assembly having a chamfered edge.

12 10. The stator with a radial winding as claimed in claim 6, wherein the engaging member and
13 each said pole plate assembly are in fitting engagement.

14 11. The stator with a radial winding as claimed in claim 6, wherein the engaging member
15 includes a flange for preventing disengagement of each said pole plate assembly.

16 12. The stator with a radial winding as claimed in claim 6, wherein an inner periphery defining
17 the central hole of each said pole plate assembly comprises at least one first groove, the
18 engaging member comprising at least one second groove defined on an outer periphery thereof
19 and facing said at least one first groove, further comprising a pin extending through said at
20 least one first groove and said at least one second groove, thereby securing the engaging
21 member and said at least two pole plate assemblies together.